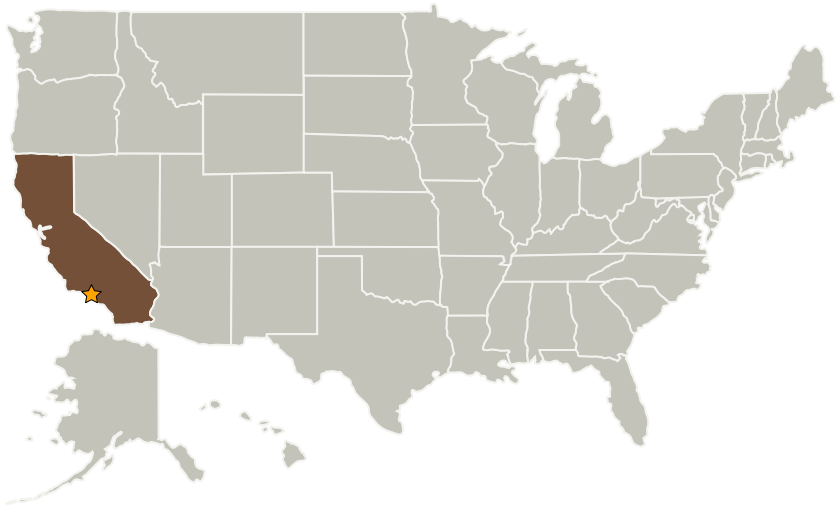
Flash 3D Planetary Entry, Descent and Landing Sensor Hardening, Phase I

Completed Technology Project (2008 - 2008)

Project Introduction

Advanced Scientific Concepts, Inc. (ASC) has developed a 128 x 128 frame, 3D Flash LADAR video camera which produces 3-D point clouds at 30 Hz. Flash Ladar Video Cameras are 3D vision systems that return range and intensity information for each pixel in real time. The ASC camera is the equivalent of 16000 range finders on a single chip. This allows the sensor to act as a 3D video camera with functionality well beyond just range finding. A previous Phase I EDL project used an ASC camera at the JPL mars yard to gather test data. Hazard Identification, and Entry Decent and Landing applications were investigated and the data demonstrated that a Flash LADAR system can resolve landing hazards and is suitable as an EDL sensor. In response to this solicitation ASC will further develop its technology for EDL. ASC is proposing radiation hardening, increased sensitivity and reliability improvements. These improvements will lead to a phase II development that will increase the TRL level of this sensor. The new FLVC sensor will have improved range and reliability over ASC's current camera and will provide the functionality to meet NASA's EDL requirements.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Advanced Scientific Concepts, Inc.	Supporting Organization	Industry	Goleta, California

Primary U.S. Work Locations
California

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Steve Silverman

Technology Areas

Primary:

- TX04 Robotic Systems
  - TX04.5 Autonomous Rendezvous and Docking
    - TX04.5.1 Relative Navigation Sensors